TRAFFIC PATTERNS IN DOMESTIC WATER TRANSPORTATION OF FARM PRODUCTS AND SUPPLIES

MARKETING RESEARCH REPORT NO. 465

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ACKNOWLEDGMENTS

This report is based upon data gathered by the U. S. Corps of Engineers, Department of the Army, Washington, D. C. Special acknowledgment is due Morris Perlberg, Chief, Waterborne Commerce Statistics Branch, U. S. Corps of Engineers, for his assistance on the technical aspects of reporting waterborne commerce statistics. Much of the preliminary planning on the statistical tables was done by James M. Henderson, a former employee of the U. S. Department of Agriculture.

STATISTICAL TABLES

The tables in this report were compiled from data in "Waterborne Commerce of the United States," which is published by the Corps of Engineers, Department of the Army. Data for 1949 and 1951 were taken from Part 2 of the volumes of those 2 calendar years. Data for 1953, 1955, and 1957 were taken from the following parts of the volumes for those years: Part 1, Atlantic Coast; Part 2, Gulf Coast, Mississippi River System, and Antilles; Part 3, Great Lakes; Part 4, Pacific Coast, Alaska, and Pacific Islands; and Part 5, National Summaries.

All figures in this report are based on tons of 2,000 pounds.

CONTENTS

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SUMMARY

A net total of about 26 million tons of agricultural commodities and farm supplies was moved in the Nation's domestic waterborne commerce in 1957. (The net tonnage figure refers to shipments that originated on the various domestic waterways, and thus duplications resulting from receipts and shipments of the same cargo on the same waterway have been eliminated insofar as possible.) This 26 million tons represents an increase of about one-third over the 1949 volume and corresponds to the increase in total domestic waterborne commerce for this period.

Over 90 percent of the agricultural tonnage in 1957 was coastwise, lake, or river traffic. The balance was intraterritory (moving wholly within a United States territory) or intraport and local traffic.

Eleven and a half million tons, or 44 percent of the total agricultural traffic on domestic waterways, moved on the rivers in 1957, a gain in river volume of 125 percent over 1949; 7.5 million tons, or 29 percent, was coastwise traffic, an increase in such traffic of 22 percent over 1949; and almost 4.5 million tons, or 17 percent, was lake commerce, representing a decline in such lake tonnage of 22 percent below the 1949 volume.

Grains and grain preparations made up almost half of the agricultural traffic moving on the rivers in 1957 and nearly nine-tenths of the agricultural lake traffic, but only about one-tenth of the coastwise volume of agricultural products.

Farm supplies, principally phosphate fertilizer, and miscellaneous food products, largely sugar, made up 4.6 million tons of the 7.5 million tons of farm products moving in coastwise traffic in 1957.

The gross tonnage of agricultural products moving on the Mississippi River and its major tributaries amounted to 10.1 million tons in 1957, a fourfold increase over that in 1949. This gross tonnage is the sum of the shipments moving upstream and downstream.

Agricultural traffic on the Columbia River totaled 3.1 million tons in 1957, a fifteenfold increase over 1949. This volume was slightly larger than the combined tonnage of domestic agricultural traffic on the Illinois and Ohio Rivers in 1957.

Coastwise shipments and receipts of domestic agricultural products at major Atlantic, Gulf, and Pacific ports in 1957 amounted to 6.7 million tons. This was a 20-percent increase over traffic handled in 1949, but 9 percent less than the increase in 1955.

Lake shipments and receipts of domestic agricultural products amounted to 8.9 million tons in 1957, representing a 22-percent decline below the 1949 volume. The decrease for 1953 was even greater. Lakes Erie, Michigan, and Superior handled 90 percent of the agricultural traffic on the lakes both in 1949 and in 1957.

The decline in total domestic agricultural traffic on the Great Lakes, in the 1949-57 period, reflected the decline in its major item of traffic, grain and grain preparations; wheat constituted from 57 to 73 percent of the total grain and grain preparations.

TRAFFIC PATTERNS IN DOMESTIC WATER TRANSPORTATION OF FARM PRODUCTS AND SUPPLIES

By Joseph G. Nale-Povic, transportation economist
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INTRODUCTION

Since World War II there has been a large expansion in total domestic waterborne traffic. 2/ The purpose of this study of changes in the waterborne movement of agricultural commodities and farm supplies between 1949 and 1957 is to (1) supplement previous studies on rail and truck movement of agricultural commodities, (2) form a basis for future research on water transportation of these products, and (3) identify significant aspects of domestic water transportation that may merit more intensive investigation because of their impact on other modes of agricultural transportation. 3/ This study is part of a broad program of research, being conducted by the Agricultural Marketing Service, to provide information on the various modes of transport used in marketing agricultural products.

It is true, of course, that the opening of the St. Lawrence Seaway in 1959 increased shipments on the Great Lakes. This change, however, affected essentially the volume of exports and had little or no influence on domestic movement of agricultural products on the lakes. The usefulness of the data in this report, therefore, has been in no way impaired by the impact of the St. Lawrence Seaway.

Competing carriers, rail and truck, as well as agricultural producers and shippers, are interested in the movement of farm products by water, particularly in view of the rapid expansion of water transportation.

The basic data in the report were drawn from Domestic Waterborne Commerce of the United States, published by the U. S. Corps of Engineers, Department of the Army.

In the early part of this report, volumes of agricultural commodities are given as net tonnages (tonnages shipped--unduplicated volume) for each general category of water traffic (coastwise, lake, river). Traffic handled on individual rivers, lakes, and at coastal ports is later given in gross tons (duplicated tonnage) in order to reflect the magnitude of the traffic handled. For example, port traffic consists not only of the tonnage shipped but also of the tonnage received. One without the other would not give a true picture of traffic handled.

1/ Mr. Nale-Povic resigned from the Agricultural Marketing Service in October 1960.

2/ The data in this study do not include exports and imports.

3/ In 1947, the Corps of Engineers initiated a new method of reporting and compiling statistical data on waterborne commerce. It was designed largely to eliminate duplications in tonnage figures which occurred under the old reporting system. The year 1949 was selected as the base year for this study since it reflected data compiled under the new reporting system. In addition, the effects of the emergency traffic conditions of World War II had been largely eliminated by 1949.

Thus, gross tonnage (the sum of shipments and receipts without reference to origin and destination) is the only way to arrive at an indication of the relative importance of the traffic handled on the individual rivers and lakes, and at coastal ports. In this respect, the 5.8 million gross tons carried on the Mississippi River in 1957 included a considerable tonnage that originated on or that was moving to other rivers. The gross tonnage provides a good indication of the tonnage originated and terminated on each of the tributaries.

These data are analyzed by major agricultural commodity groups: 4/ Animal and animal products; grains and grain preparations; fresh or frozen fruits, vegetables, and preparations; miscellaneous food products; inedible vegetable products; unmanufactured textile fibers; and farm supplies. 5/ They are also analyzed by mode of waterborne transport: coastwise, lake, river, intraterritory, and other (local and intraport). 6/ The major emphasis in the report is on the first three groups, namely, coastwise, lake, and river, since they accounted for close to 90 percent of the total domestic waterborne movement of agricultural products and supplies during the years covered.

Comparisons of the traffic volume are made for the years 1949, 1951, 1953, 1955, and 1957, using 1949 as the base period.

4/ See table 9, p. 15, for a detailed listing of the items comprising each of these commodity groups.

5/ Farm supplies are defined in this report as farm machinery (including tractors), implements and parts; nitrogenous, phosphate, and potash fertilizers and fertilizer materials, not elsewhere classified (n.e.c.).

6/ "Coastwise" applies to traffic carried over the Atlantic or Pacific Ocean, the Gulf of Mexico, or important arms of these oceans or the Gulf of Mexico in deep draft, oceangoing vessels, such as traffic from New Orleans to Baltimore. Chesapeake Bay and Puget Sound are considered internal bodies of water rather than areas of the ocean and therefore traffic confined to these areas is considered "river" rather than "coastwise." Traffic between the Continental United States and United States territories and possessions and traffic among the territories and possessions is termed "coastwise." Traffic between Great Lakes ports and seacoast ports, when carried over the oceans, is also termed "coastwise."

"Lake" applies to traffic between United States ports on the Great Lakes system.

"River" applies to traffic the entire movement of which takes place over inland waterways. Those movements involving carriage on both inland waterways and waters of the Great Lakes system are also termed "river."

"Intraterritory receipts and shipments" apply only to traffic between ports within a territory or possession. Thus, movements from one island to another in the Hawaiian Islands, between ports in Alaska, and between ports in the Antilles area (Puerto Rico and the Virgin Islands are considered as a single unit) are considered as "intraterritory." Movements from Continental U. S. to a territory or possession and from one territory to another (Antilles to Hawaii) are considered "coastwise" traffic.

"Other" applies to intraport and local traffic.

DOMESTIC WATERBORNE SHIPMENTS OF AGRICULTURAL COMMODITIES AND SUPPLIES BY MODE OF TRANSPORT

Total general cargo moving in domestic waterborne commerce of the United States was almost 773 million net tons 7/ in 1957, an increase of 34 percent over 1949 (table 1 and fig. 1). 8/ Most of the increase took place in river traffic; about 25 percent of the 1957 tonnage was coastwise traffic; 24 percent, lake; 36 percent, river; 14 percent, intraport and local; and a negligible percentage, intraterritory.

Agricultural commodities and farm supplies in domestic waterborne commerce totaled 26 million tons in 1957, a little over 3 percent of all cargo. This 1957 tonnage marked an increase in agricultural traffic of 34 percent over the 1949 figure (table 2 and fig. 2). This was the same percentage increase as occurred in the movement of general cargo.

The heaviest movement of agricultural products was on the rivers. This traffic rose from 5.1 million tons in 1949 to 11.5 million tons in 1957, an increase of 125 percent.

Coastwise movement of agricultural products amounted to approximately 7.5 million tons in 1957 compared with 6.2 million tons in 1949, a gain of 22 percent. The coastwise movement for the years covered ranged from 29 to 37 percent of the total waterborne movement of agricultural commodities.

By contrast, lake movement declined some 22 percent, from 5.7 million tons in 1949 to 4.5 million tons in 1957. In 1949, lake traffic represented 30 percent of the total volume of agricultural commodities moved by water, but by 1957 this traffic had dropped to only 17 percent of the total.

Grain and grain products represented the largest share of the tonnage of agricultural products transported by water in the United States (table 3). In 1957, they were 40 percent of the total. In earlier years (1949, 1951, 1953, and 1955) grain shipments were either equal to or were greater than this percentage. In 1957, inedible animal products and fresh and frozen meats accounted for the heavy tonnage increase over 1949 in the animal and animal products category. The increase in tonnage of inedible animal products was primarily in river traffic, and the increase in fresh and frozen meats was in coastwise and lake traffic.

7/ Net tons refers to volume of freight actually moved. It excludes any duplication that might result from a single ton of freight being counted as a ton shipped at origin and again as a ton received at destination.

8/ This percentage figure (34 percent) and all succeeding percentages pertaining to tonnage distributions, whether in tables or in the text, were computed from the original unrounded data, part of which is not shown in this report. For this reason there may often be a slight discrepancy between a percentage figure used herein and the figure that might be calculated from the rounded data to which it relates.

Table 1.--Domestic waterborne commerce of the United States: Summary of general cargo (including bulk cargo) tonnages, selected years 1949-57 1/

Year	Coastwise		Lake		River		Intraterritory		Other 2/		Total	
	Volume	Change from 1949	Volume	Change from 1949	Volume	Change from 1949	Volume	Change from 1949	Volume	Change from 1949	Volume	Change from 1949
	1,000 tons 3/	Percent	1,000 tons 3/	Percent	1,000 tons 3/	Percent	1,000 tons 3/	Percent	1,000 tons 3/	Percent	1,000 tons 3/	Percent
1949	161,431	--	145,592	--	165,703	--	4/	--	102,638	--	575,364	--
1951	186,759	16	178,463	22	213,405	28	1,417	--	112,029	9	692,073	20
1953	188,758	17	188,621	30	224,257	35	1,253	--	102,562	0	705,451	23
1955	195,718	21	184,809	27	249,693	51	1,951	--	112,863	10	745,034	29
1957	196,419	22	182,150	25	281,066	70	2,403	--	110,824	8	772,862	34

1/ Percentages computed from unrounded data.
2/ Consists of intraport and local traffic.
3/ Net tons of 2,000 pounds. These data represent unduplicated tonnages.
4/ Included in other types of traffic prior to 1950.

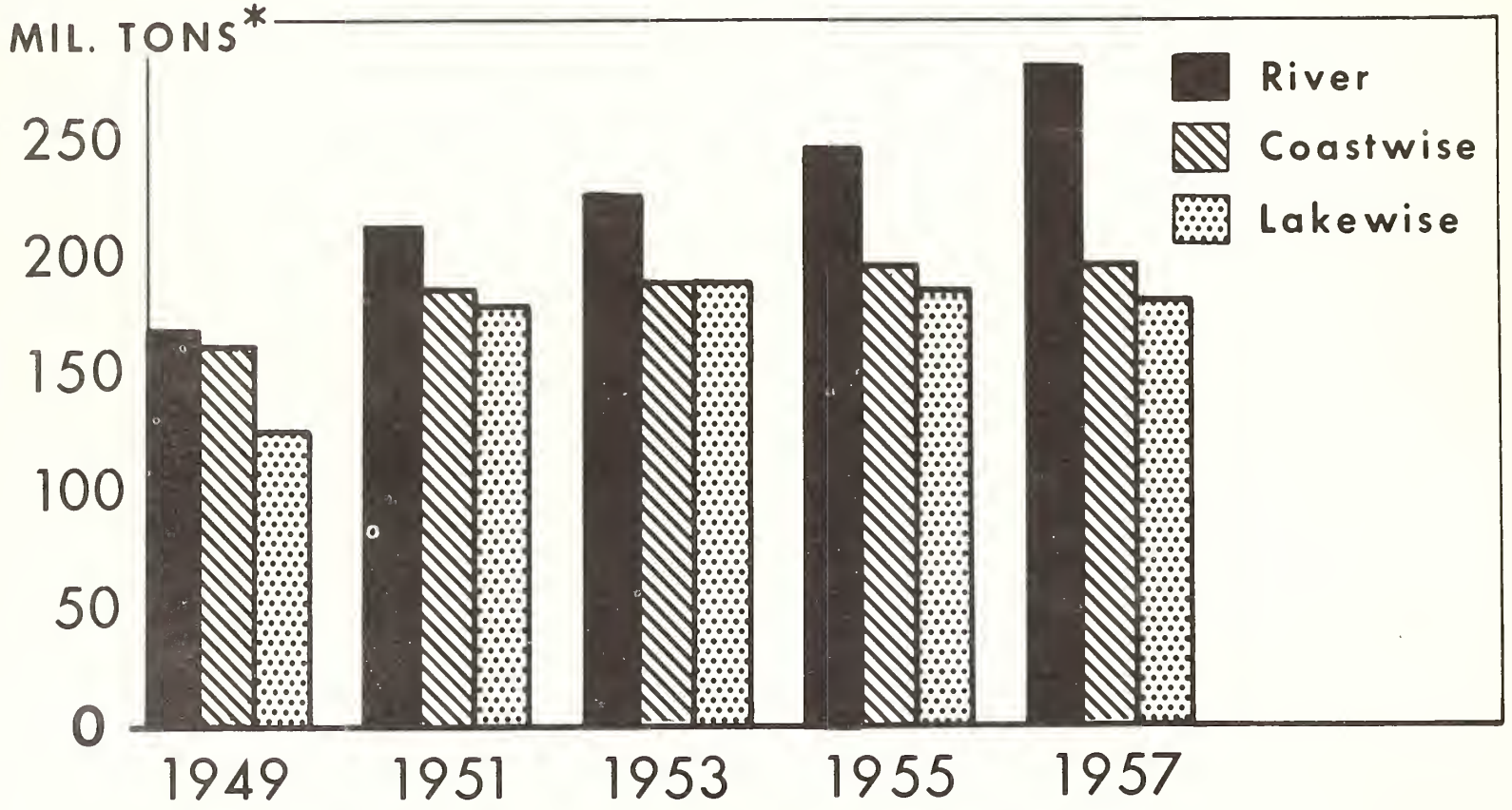
Table 2.--Domestic waterborne commerce: Summary of net agricultural volume by type of water transport, selected years 1949-57 1/

Year	Coastwise			Lake			River			Intraterritory			Other 2/			Total		
	Volume	Percent of total	Change from 1949	Volume	Percent of total	Change from 1949	Volume	Percent of total	Change from 1949	Volume	Percent of total	Change from 1949	Volume	Percent of total	Change from 1949	Volume	Percent of total	Change from 1949
	1,000 tons 3/	Pct.	Pct.	1,000 tons 3/	Pct.	Pct.	1,000 tons 3/	Pct.	Pct.	1,000 tons 3/	Pct.	Pct.	1,000 tons 3/	Pct.	Pct.	1,000 tons 3/	Pct.	Pct.
1949	6,204	32	--	5,729	30	--	5,116	26	--	4/	--	--	2,361	12	--	19,410	100	--
1951	7,143	34	15	5,541	26	-3	6,188	29	21	509	2	--	1,932	9	-18	21,313	100	10
1953	7,513	37	21	5/3,781	18	-34	6,599	32	29	531	3	--	2,084	10	-12	5/20,508	100	6
1955	7,918	34	28	4,651	20	-19	8,163	35	60	620	3	--	1,924	8	-19	23,276	100	20
1957	7,542	29	22	4,456	17	-22	11,515	44	125	695	3	--	1,869	7	-21	26,077	100	34

1/ Percentages computed from unrounded data.
2/ Consists of intraport and local traffic.
3/ Net tons of 2,000 pounds. These data represent unduplicated tonnages.
4/ Included in other types of traffic prior to 1950.
5/ Does not include 1953 volume carried by rail-car ferries.

VOLUME OF GENERAL AND BULK CARGO TRANSPORTED DOMESTICALLY BY WATER

Selected Years



* NET TONS OF 2,000 POUNDS.

U. S. DEPARTMENT OF AGRICULTURE NEG. 7832-60 (4) AGRICULTURAL MARKETING SERVICE

Figure 1.

Table 3.--Domestic waterborne commerce: Annual volume of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total 2/	Volume	Percentage of total 2/	Change from 1949	Volume 3/	Percentage of total 2/	Change from 1949	Volume	Percentage of total 2/	Change from 1949	Volume	Percentage of total 2/	Change from 1949
	1,000 tons	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent
Animal and animal products	1,114	6	1,354	6	22	1,301	6	17	1,467	6	32	2,917	11	162
Grain and grain preparations	9,554	49	9,734	46	2	8,309	41	-13	9,241	40	-3	10,399	40	9
Fruits, vegetables and preparations, fresh or frozen	765	4	632	3	-17	665	3	-13	719	3	-6	888	3	16
Fruits, vegetables and preparations n.e.c.*	1,650	9	1,819	8	10	1,652	8	4/	1,794	8	9	1,505	6	-9
Miscellaneous food products	2,683	14	2,790	13	4	3,651	18	36	3,389	15	26	3,065	12	14
Vegetable products, inedible	1,164	6	1,833	9	58	2,002	10	72	3,358	14	189	3,639	14	213
Textile fibers	65	4/	46	4/	-30	49	4/	-24	29	4/	-55	23	4/	-64
Farm supplies	2,417	12	3,104	15	28	2,879	14	19	3,280	14	36	3,641	14	51
Total	19,412	100	21,312	100	100	20,508	100	6	23,277	100	20	26,077	100	34

1/ Net tons for coastwise, intraterritory, intraport, lake, local, and river traffic.
2/ Percentages computed from unrounded data.
3/ Does not include volume carried by rail-car ferries. These data are unavailable.
4/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

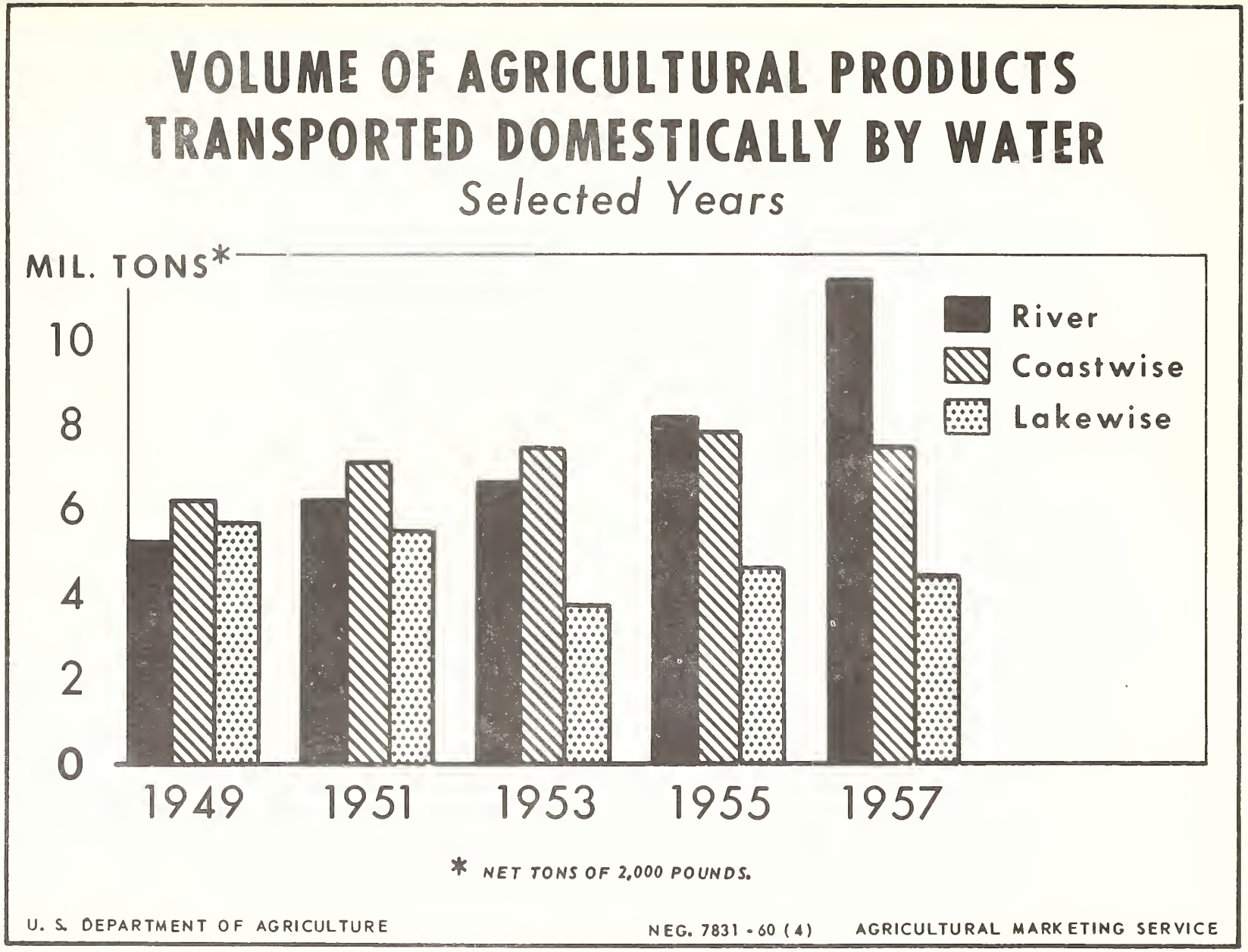

VOLUME OF AGRICULTURAL PRODUCTS
TRANSPORTED DOMESTICALLY BY WATER
Selected Years
MIL. TONS*
10
8
6
4
2
0
1949
1951
1953
1955
1957
River
Coastwise
Lakewise
* NET TONS OF 2,000 POUNDS.
U. S. DEPARTMENT OF AGRICULTURE
NEG. 7831 - 60 (4)
AGRICULTURAL MARKETING SERVICE

Figure 2.

Most of the domestic grain traffic moved on the lakes or on the rivers. In fact, grain shipments were the largest source of agricultural traffic for these two modes of transport. They ranged from 48 to 61 percent of the river traffic and from 81 to 89 percent of the lake traffic in the years covered in this study (tables 4 and 5).

Corn and wheat each represented 42 percent of the total grain traffic moved on the rivers in 1957 (table 6). Compared with 1949 this represents a decline in the percentage of grain traffic that was corn and a small increase in the percentage that was wheat. Corn tonnage itself was greater by 52 percent in 1957 than in 1949, wheat tonnage by 110 percent, and total grain tonnage by 86 percent. Barley, rye, and grain sorghums showed very large percentage increases over the base year; however, the volume of such grains moved on rivers in 1957 was still a very small percentage of the total grain movement.

Wheat accounted for slightly over one half of the grain tonnage moving on the lakes in 1957 (table 7). This contrasts with 1949 when it represented two-thirds of the total grain traffic. Corn has followed a similar pattern of decline. The decline in the tonnage of corn and wheat moved on the lakes in 1957 compared with 1949 is greater than the decline in total grain tonnage for this period. Corn tonnage decreased 46 percent; wheat, 35 percent; and all grains, 26 percent. Barley and rye were the only grains that showed any significant increase. And even here the increase did not begin until 1955.

A comparison of domestic wheat traffic on lakes and rivers shows that in 1949 (tables 6 and 7) the volume of riverborne wheat was only about one-third that of the volume carried on lakes. By 1957, the volume of riverborne wheat increased by approximately the same amount by which the lake traffic had decreased. As a result, the lake and river wheat traffic was almost in balance--the rivers carried some 149,000 tons more than the lakes.

The proportionate increase in domestic riverborne wheat traffic and a corresponding decrease in lake traffic suggests a diversion to riverborne traffic. This diversion was promoted by the growth of new grain elevators and flour mill facilities on the Mississippi River system and by partial relocation of the poultry industry in southeastern areas.

Other leading agricultural commodities shipped by water were: Inedible vegetable products, farm supplies, miscellaneous food products, and animal and animal products. These four groups plus grain and grain preparations comprised over 90 percent of the total volume of agricultural commodities moved by water transport in 1957 (table 3).

Soybeans and molasses made up the major share of the traffic classified as inedible vegetable products (table 9). Their combined 1957 volume, for all types of water transport, amounted to 2.9 million tons, or 80 percent of the 1957 tonnage of inedible vegetable products. Most of this traffic moved on the rivers.

Farm supplies and miscellaneous food products were the major agricultural commodity groups moving in coastwise traffic in the 1949-57 period (table 8). They represented from 58 to 62 percent of all the coastwise agricultural traffic

Table 4.--Domestic riverborne commerce: Agricultural volume by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/
	1,000 tons	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent
Animal and animal products	93	2	118	2	27	114	2	23	233	3	151	1,301	11	1,299
Grain and grain preparations	2,984	59	3,737	61	25	3,816	58	28	4,288	52	44	5,541	48	86
Fruits, vegetables and preparations, fresh or frozen	284	6	144	2	-49	139	2	-51	141	2	-50	275	2	-3
Fruits, vegetables and preparations n.e.c.*	221	4	205	3	-8	86	1	-61	49	1	-78	101	1	-54
Miscellaneous food products	748	15	847	14	13	987	15	32	853	10	14	867	8	16
Vegetable products, inedible	383	7	659	11	72	968	15	152	2,004	25	423	2,539	22	563
Textile fibers	20	3/	19	3/	-6	15	3/	-23	6	3/	-68	14	3/	-31
Farm supplies	383	7	460	7	20	474	7	24	587	7	53	877	8	129
Total	5,116	100	6,189	100	21	6,599	100	29	8,161	100	60	11,515	100	125

1/ These data are given in net tons, and are unduplicated tonnages.
2/ Percentages computed from unrounded data.
3/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

Table 5.--Domestic commerce on lakes: Agricultural volume by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total 2/	Volume	Percentage of total 2/	Change from 1949	Volume 3/	Percentage of total 2/	Change from 1949	Volume	Percentage of total 2/	Change from 1949	Volume	Percentage of total 2/	Change from 1949
	1,000 tons	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent
Animal and animal products	230	4	416	7	81	236	6	2	302	6	31	268	6	17
Grain and grain preparations	5,103	89	4,642	84	-9	3,122	82	-39	3,764	81	-26	3,792	85	-26
Fruits, vegetables and preparations, fresh or frozen	52	1	48	1	-7	33	1	-37	30	1	-43	23	1	-56
Fruits, vegetables and preparations n.e.c.*	78	2	77	1	-1	66	2	-15	71	2	-9	89	2	14
Miscellaneous food products	17	4/	43	1	159	113	3	582	115	2	595	8	4/	-50
Vegetable products, inedible	177	3	220	4	24	137	4	-23	295	6	67	212	5	20
Textile fibers	2	4/	1	4/	-65	1	4/	-32	2	4/	12	5/	4/	-73
Farm supplies	70	1	92	2	31	74	2	5	72	2	2	63	1	-10
Total	5,729	100	5,539	100	-3	3,782	100	-34	4,651	100	-19	4,455	100	-22

1/ These data are given in net tons, and are unduplicated tonnages.
2/ Percentages computed from unrounded data.
3/ Does not include volume carried on rail-car ferries.
4/ Less than 0.5 percent.
5/ Less than 500 tons.
* N.e.c.--Not elsewhere classified.

Table 6.--Domestic riverborne commerce: Net tons of grains and grain preparations by commodity, selected years 1949-57 1/

Commodity	1949		1951			1953			1955			1957		
	Volume	Percentage of total 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/
	1,000 tons	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent
Corn	1,512	51	1,896	51	25	2,244	59	48	1,700	40	12	2,304	42	52
Rice	108	4	75	2	-31	116	3	7	96	2	-11	97	2	-10
Barley and rye	3	3/	105	3	4/	28	1	4/	288	7	4/	187	3	4/
Wheat	1,102	37	1,340	36	22	1,095	29	-1	1,588	37	44	2,317	42	110
Oats	131	4	182	4	39	248	6	89	305	7	133	262	5	100
Wheat flour	8	3/	2	3/	-75	7	3/	-12	8	3/	0	25	3/	213
Grain sorghums	21	1	19	1	-10	40	1	90	176	4	738	210	4	900
Other flour; flour and grain preparations n.e.c.*	21	1	2	3/	-90	4	3/	-81	12	3/	-43	12	3/	-43
Animal feeds (fodders and feeds) n.e.c.*	78	2	116	3	49	34	1	-56	115	3	47	127	2	63
Total	2,984	100	3,737	100	25	3,816	100	28	4,288	100	44	5,541	100	86

1/ These data are given in net tons and are unduplicated tonnages.
2/ Percentages computed from unrounded data.
3/ Less than 0.5 percent.
4/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Table 7.--Domestic commerce on lakes: Net tons of grains and grain preparations by commodity, selected years 1949-57 1/

Commodity	1949		1951			1953			1955			1957		
	Volume	Percentage of total 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume 3/	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/
	1,000 tons	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent
Corn	665	13	312	7	-53	522	17	-22	216	6	-68	357	9	-46
Barley and rye	370	7	262	6	-29	179	6	-52	736	20	99	573	15	55
Wheat	3,351	66	3,405	73	2	1,958	63	-42	2,197	58	-34	2,168	57	-35
Oats	180	4	119	3	-34	35	1	-81	179	5	-1	138	4	-23
Wheat flour	141	3	131	3	-7	99	3	-30	89	2	-37	162	4	15
Grain sorghums	104	2	99	2	-5	85	2	-18	77	2	-26	137	4	32
Other flour; flour and grain preparations n.e.c.*	220	4	220	4	0	180	6	-18	221	6	0	140	4	-36
Animal feeds (fodders and feeds) n.e.c.*	72	1	94	2	31	64	2	-11	49	1	-32	117	3	63
Total	5,103	100	4,642	100	-9	3,122	100	-39	3,764	100	-26	3,792	100	-26

1/ These data represent unduplicated tonnages.
2/ Percentages computed from unrounded data.
3/ Does not include volume carried on rail-car ferries for Lake Michigan. These data are unavailable.
* N.e.c.--Not elsewhere classified.

Table 8.--Domestic coastwise commerce: Agricultural volume by commodity groups selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/	Volume	Percentage of total 2/	Change from 1949 2/
	1,000 tons	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent	1,000 tons	Percent	Percent
Animal and animal products	158	3	176	3	11	212	3	34	232	3	47	248	3	57
Grain and grain preparations	501	8	732	10	46	596	8	19	632	8	26	663	9	32
Fruits, vegetables and preparations, fresh or frozen	403	7	161	2	-60	168	2	-58	150	2	-63	147	2	-64
Fruits, vegetables and preparations n.e.c.*	1,189	19	1,367	19	15	1,401	19	18	1,498	19	26	1,277	17	7
Miscellaneous food products	1,779	29	1,825	26	3	2,409	32	35	2,278	29	28	2,111	28	19
Vegetable products, inedible	249	3	555	8	123	542	7	118	664	8	167	552	7	122
Textile fibers	25	3/	14	3/	-45	21	3/	-17	10	3/	-59	6	3/	-75
Farm supplies	1,900	31	2,313	32	22	2,164	29	14	2,454	31	29	2,538	34	34
Total	6,204	100	7,143	100	15	7,513	100	21	7,918	100	28	7,542	100	22

1/ These data are given in net tons, and are unduplicated tonnages.
2/ Percentages computed from unrounded data.
3/ Less than 0.5 percent
* N.e.c.--Not elsewhere classified.

during the selected years. Phosphate fertilizer materials accounted for most of the tonnage in the farm supplies group, and sugar was the principal item in miscellaneous food products (table 9).

GROSS TONNAGE OF AGRICULTURAL COMMODITIES AND SUPPLIES TRANSPORTED BY WATER

Volume Carried on the Major Rivers

Agricultural traffic on the major rivers of the United States increased several hundred percent between 1949 and 1957 (table 10). (This is based on gross tonnage handled, rather than the net tonnage moved.) The greatest increase was on the Columbia River, where such traffic rose over 1,400 percent. While in 1949 the Columbia carried only 14 percent as much agricultural traffic as the Mississippi, in 1957 it carried 54 percent as much.

Agricultural commodities moving on the Mississippi River and its principal tributaries totaled over 10 million gross tons in 1957. 9/ About 57 percent of this moved on the Mississippi itself. This contrasts with the 65 percent that moved on the Mississippi in 1949, indicating that traffic on the tributaries has been increasing more rapidly than on the river itself. Expansion of traffic on the Missouri River has lagged behind all the others but recent improvements in navigable depth of the river may result in further increases in traffic.

Mississippi River

Traffic of agricultural products on the Mississippi has increased steadily since 1949, reaching a total of almost 5.8 million gross tons in 1957, a volume almost 4 times as large as the 1.5 million tons handled in the earlier year (table 11). Between two-thirds and three-quarters of this tonnage moved downstream during this period; the balance moved upstream.

The commodity groups moving in heaviest quantities on the Mississippi River were grains, inedible vegetable products, farm supplies, and miscellaneous food products. In 1957, they accounted for over 99 percent of the agricultural traffic.

Between 1949 and 1957, grain traffic ranged from 47 to 63 percent of the total volume of agricultural products moving on the Mississippi. It moved almost exclusively downstream. Corn and wheat made up the bulk of the grain movement.

9/ Gross tonnage figures reported for the Mississippi River and its tributaries may include a single ton of cargo several times. The figures for each river include the sum of upbound and downbound traffic on that river. Traffic on a particular river includes: (a) Movement entirely within the confines of that river, and (b) movement partly on another waterway or waterways regardless of where movement originated or terminated. Thus, the same ton of cargo will be reported each time it moves on a different river. This contrasts with the net tonnage figures for all rivers reported in tables 1, 2, and 4, which reflect the actual volume handled.

Table 9.--Domestic waterborne commerce: Summary of agricultural volume by commodities, selected years 1949-57 1/

Commodity	1949	1951		1953		1955		1957	
	Volume	Volume	Change from 1949 2/	Volume	Change from 1949 2/	Volume	Change from 1949 2/	Volume	Change from 1949 2/
	1,000 tons	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Animal and animal products:									
Animal, edible	78	59	-24	43	-46	33	-58	15	-80
Meat & meat products, fresh or frozen	54	94	75	74	38	87	61	92	71
Meat & meat products, canned	8	5	-39	4	-55	7	-6	8	5
Meat & meat products otherwise prepared or preserved	15	35	124	34	122	33	116	33	114
Animal oils & fats, edible	41	54	31	99	140	112	174	67	63
Condensed & evaporated milk	28	26	-9	27	-5	33	18	32	13
Dried milk & solids	7	12	91	17	163	18	176	19	190
Cheese	73	88	20	55	-24	96	31	76	4
Dairy products, n.e.c.*	122	258	112	134	10	173	42	166	36
Eggs & egg products, n.e.c.*	20	11	-47	7	-63	9	-52	4	-80
Edible animal products, n.e.c.*	17	6	-62	5	-69	5	-72	1	-97
Hides & skins, raw, except furs	26	28	9	31	20	28	9	33	27
Animal products, inedible n.e.c.*	625	678	8	770	23	832	33	2,371	279
Total animal & animal products	1,114	1,354	22	1,300	17	1,466	32	2,917	162
Grain and preparations:									
Corn	2,353	2,273	-3	2,947	25	2,001	-15	2,795	19
Rice	338	320	-5	364	8	363	8	385	14
Barley & rye	374	385	3	208	-45	1,034	177	770	106
Wheat	5,086	4,956	-3	3,092	-39	3,978	-22	4,548	-11
Oats	324	309	-5	294	-9	516	59	409	26
Wheat flour & semolina	223	217	-3	187	-16	165	-26	259	16
Other grains	141	599	323	369	161	417	195	441	211
Other flour & flour & grain preparations, n.e.c.*	313	265	-15	226	-28	302	-3	210	-32
Animal feeds (fodders & feeds), n.e.c.*	402	410	2	622	55	464	15	580	44
Total grain & preparations	9,554	9,734	2	8,309	-13	9,240	-3	10,397	9
Fruits, vegetables and preparations, fresh or frozen except fruit juice:									
Vegetables & preparations, fresh or frozen	412	283	-31	278	-33	278	-33	412	4/
Fruits & preparations, fresh or frozen, except bananas	353	349	-1	387	10	441	25	476	35
Total fruits, vegetables & preparations, fresh or frozen: except fruit juice	765	632	-17	665	-13	719	-6	888	16

See footnotes at end of table.

Continued

Table 9.--Domestic waterborne commerce: Summary of agricultural volume by commodities, selected years 1949-57 1/--Continued

Commodity	1949	1951		1953		1955		1957	
	Volume	Volume	Change from 1949 2/	Volume	Change from 1949 2/ 3/	Volume	Change from 1949 2/	Volume	Change from 1949 2/
	1,000 tons	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Fruits, vegetables and preparations, n.e.c.*, including fruit juices, canned or frozen:									
Vegetable & preparations, canned	478	589	23	509	6	531	11	338	-29
Soybean flour, edible (until 1952)	6	5/	-94	---	---	---	---	---	---
Vegetables & preparations, n.e.c.* (Inc. soybean flour after 1952)	140	93	-33	65	-54	52	-63	57	-59
Fruits & preparations, dried or evaporated	49	56	15	65	33	134	175	322	563
Fruits & preparations, canned	568	895	58	828	46	974	72	612	8
Fruit juices, canned or frozen (1953)	---	---	---	88	---	1	---	64	---
Fruits & preparations except fruit juice, otherwise prepared or preserved	243	23	-90	15	-94	17	-93	5	-98
Vegetable oils & fats, edible	167	162	-3	82	-51	84	-50	106	-36
Total fruits, vegetables & preparations, n.e.c.* including fruit juices, canned or frozen.	1,651	1,818	10	1,652	4/	1,793	9	1,504	-9
Miscellaneous food products:									
Nuts & preparations	27	27	-1	20	-27	20	-24	10	-63
Sugar	2,311	2,576	11	3,182	38	2,888	25	2,638	14
Molasses, edible; honey, syrup & other related sugar products	240	122	-49	116	-52	90	-63	114	-52
Beverages & syrups, n.e.c.*	104	66	-37	141	35	144	38	32	-69
Groceries & food n.e.c.* (1952)	---	---	---	191	---	246	---	271	---
Total miscellaneous food products	2,682	2,791	4	3,650	36	3,388	26	3,065	14

See footnotes at end of table.

Continued

Table 9.--Domestic waterborne commerce: Summary of agricultural volume by commodities, selected years 1949-57 1/--Continued

Commodity	1949	1951		1953		1955		1957	
	Volume	Volume	Change from 1949 2/	Volume 3/	Change from 1949 2/	Volume	Change from 1949 2/	Volume	Change from 1949 2/
	1,000 tons	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Vegetable products, inedible, except fibers and food:									
Soybeans (1951 and after)	---	404	---	559	---	1,151	---	1,822	---
Flaxseed	233	249	7	136	-42	403	73	177	-24
Oilseeds, n.e.c.*, including castor beans	241	72	-70	52	-79	34	-86	15	-94
Vegetable oils, fats, & waxes, inedible and/or crude	100	117	17	108	8	229	130	362	264
Vegetable dyeing & tanning materials	8	8	7	6	-22	6	-25	6	-21
Seeds, except oilseeds	13	14	4	17	23	15	8	14	7
Tobacco, unmanufactured	9	15	61	13	35	13	36	11	22
Molasses, inedible	431	811	88	1,038	141	1,437	234	1,113	158
Sugar cane (after 1952, in animal feeds, n.e.c.*)	63	64	1	---	---	---	---	---	---
Vegetable products, inedible, n.e.c.*	66	79	21	74	13	71	8	119	80
Total vegetable products, inedible, except fibers & wood	1,164	1,833	58	2,003	72	3,359	189	3,639	213
Textile fibers:									
Cotton, unmanufactured	37	31	-18	27	-28	12	-68	17	-55
Wool, unmanufactured	27	16	-42	22	-18	17	-37	7	-76
Total textile fibers	64	46	-30	49	-24	29	-55	23	-64
Farm supplies:									
Agricultural machinery, implements, & parts (including tractors)	53	63	19	60	14	54	3	49	-8
Nitrogenous fertilizers & fertilizer materials	62	299	382	124	100	230	271	318	412
Phosphate fertilizer materials	1,731	2,252	30	2,328	34	2,421	40	2,776	60
Potash fertilizer materials	60	33	-45	36	-40	40	-34	62	2
Fertilizer & fertilizer materials	510	457	-10	331	-35	534	5	437	-14
Total farm supplies	2,416	3,104	28	2,879	19	3,279	36	3,642	51
Grand total	19,410	21,312	10	20,507	6	23,273	20	26,075	34

1/ Net tonnage for coastwise, intraterritory, intraport, lake, local, and river traffic.
2/ Percentages computed from unrounded data.
3/ Does not include volume carried on rail-car ferries. These data are unavailable.
4/ Less than 0.5 percent.
5/ Less than 500 tons.
* N.e.c.--Not elsewhere classified.

Table 10.--Riverborne commerce: Summary of gross tonnage of agricultural traffic by major rivers, selected years 1949-57 1/

Rivers	1949	1951		1953		1955		1957	
	Volume	Volume	Change from 1949 2/	Volume	Change from 1949 2/	Volume	Change from 1949 2/	Volume	Change from 1949 2/
	1,000 tons	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Mississippi	1,495	2,267	52	3,623	142	4,632	210	5,761	285
Illinois	412	843	104	1,397	239	1,733	320	1,624	294
Ohio	235	258	10	672	186	1,080	359	1,474	527
Tennessee	109	170	56	389	258	799	634	1,134	943
Missouri	46	47	1	55	18	197	324	134	188
Columbia	206	1,746	748	1,281	522	1,549	652	3,136	1,423

1/ Sum of upbound and downbound traffic for each river regardless of origin or destination of the traffic. Information is unavailable on the amount of duplication.

2/ Percentages computed from unrounded data.

Table 11.--Mississippi River: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products..	3,963	2/	26,374	1	566	13,945	2/	252	44,938	1	3/	37,749	1	3/
Grain and grain preparations..	880,483	59	1,356,621	60	54	2,281,660	63	159	2,286,216	49	160	2,702,179	47	207
Fruits, vegetables and preparations, fresh or frozen.....	3,589	2/	466	2/	-87	29	2/	-99	4	2/	-100	5	2/	-100
Fruits, vegetables and preparations n.e.c.*.....	19,871	2	33,079	2	66	29,557	1	49	20,419	1	3	10,275	2/	-48
Miscellaneous food products..	343,747	23	409,932	18	19	535,276	15	56	457,218	10	33	440,172	7	28
Vegetable products, inedible.....	150,874	10	229,167	10	52	496,079	14	229	1,435,190	31	851	1,832,180	32	1,114
Textile fibers..	12,292	1	11,722	2/	-5	12,111	2/	2/	766	2/	-94	2,269	2/	-82
Farm supplies..	80,321	5	199,932	9	149	254,370	7	217	387,173	8	382	736,187	13	817
Total.....	1,495,140	100	2,267,293	100	52	3,623,027	100	142	4,631,924	100	210	5,761,016	100	285

1/ Sum of upbound and downbound traffic regardless of origin or destination.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Inedible vegetable products, the second largest group, reached a peak of 1.8 million tons in 1957 contrasted to not quite 151,000 tons in 1949, a twelvefold increase. The distribution of this traffic in inedible vegetable products between upstream and downstream movements fluctuated considerably during the 1949-57 period. The upbound movement rose from 12 percent of the combined upbound and downbound traffic in 1949 to 45 percent in 1953, and then declined to 19 percent in 1957. 10/ Soybeans, moving mostly downstream, have made up the bulk of the inedible vegetable group since 1953.

Farm supplies comprised 13 percent of the total agricultural tonnage in 1957. Traffic in farm supplies rose from about 80,000 gross tons in 1949 to over 736,000 tons in 1957. Phosphate fertilizers (almost entirely upbound) made up the bulk of this movement.

Miscellaneous food products totaled more than 440,000 tons in 1957 compared with less than 344,000 tons in 1949, an increase of 28 percent. Upbound sugar traffic (totaling almost 396,000 tons) made up the bulk of miscellaneous food products movement on the Mississippi in 1957.

Illinois River

Total traffic of farm products on the Illinois River amounted to over 1.6 million tons in 1957 (table 10). This exceeded the traffic on the Ohio for that year by 10 percent and on the Tennessee by 43 percent. Grains and grain preparations, inedible vegetable products (overwhelmingly soybeans), miscellaneous food products, and farm supplies comprised almost all the agricultural movements on the Illinois throughout the period studied (table 12).

Grain and grain preparations and inedible vegetable products together totaled a little over 980,000 tons in 1957, about 60 percent of all the agricultural traffic during that year. Farm supplies, in 1957, totaled almost 435,000 tons or 27 percent of the agricultural volume. In contrast, the tonnage of farm supplies was only 35,000 tons (8 percent) in 1949. Almost all of the farm supplies group consisted of fertilizers, while soybeans and inedible molasses made up the bulk of the inedible vegetable products movement.

Miscellaneous food products--principally sugar--was the other important commodity group. It represented 13 percent of the total tonnage in 1957 and 29 percent of the total in 1949.

Agricultural traffic on the Illinois was fairly well balanced between upbound and downbound movements. Upbound tonnage was almost as large as downbound tonnage in 1957 and a little larger than downbound tonnage in 1949. The low point was reached in 1953 when upstream traffic was only about half as large as the downstream.

10/ These and subsequent percentages pertaining to the distribution of traffic between upstream and downstream movements are based on tabulations developed in the study but not published in this report.

Table 12.--Illinois River: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.
Animal and animal products	119	2/	1,745	2/	3/	466	2/	292	5,934	2/	3/	4,601	2/	3/
Grain and grain preparations	239,117	58	503,074	60	110	973,721	70	307	875,043	51	266	587,159	36	146
Fruits, vegetables and preparations, fresh and frozen	4,348	1	--	--	--	--	--	--	--	--	--	--	--	--
Fruits, vegetables and preparations n.e.c.*	4,960	1	8,863	1	79	8,441	1	70	2,597	2/	-48	84	2/	-98
Miscellaneous food products	117,486	29	122,466	15	4	200,109	14	70	183,531	11	56	204,588	13	74
Vegetable products, inedible	11,278	3	69,716	8	518	55,907	4	396	387,393	22	2,435	392,954	24	2,484
Textile fibers	179	2/	252	2/	41	492	2/	175	69	2/	-61	46	2/	-74
Farm supplies	34,839	8	136,555	16	292	158,337	11	354	278,433	16	699	434,580	27	1,147
Total	412,326	100	842,671	100	104	1,397,473	100	239	1,733,000	100	320	1,624,012	100	294

1/ Sum of upbound and downbound traffic regardless of origin or destination.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Ohio River

The gross volume of agricultural products carried on the Ohio reached almost 1.5 million tons in 1957, a gain of 527 percent from the 235,000 tons carried in 1949 (table 13). The upbound movement was 91 percent of the total in 1949 but had dropped to 73 percent by 1957. This change in relationship of upbound to downbound traffic was a result of the fact that, while upbound traffic increased fivefold, downbound traffic increased almost eighteenfold between these 2 years.

Slightly over 1.0 million tons of grain moved on the Ohio in 1957. This was 69 percent of the total agricultural traffic for that year. Since 1953, corn has accounted for nearly three-fourths of the total grain movement. In 1949 and 1951 corn represented a little over half of this traffic. During 1949-57, corn and wheat combined equaled about 85 to 90 percent of the total grain traffic.

Aside from grain, the only other agricultural commodity groups moving on the Ohio were inedible vegetable products, miscellaneous food products, and farm supplies. Inedible vegetable products (mostly soybeans) had the largest tonnage of these three groups in 1955 and 1957, but ranked second or third in importance in 1949, 1951, and 1953. In 1955 and 1957, this group exceeded the combined tonnage of miscellaneous food products and farm supplies by a substantial margin. There was a large increase in tonnage of inedible vegetable products, rising from 15,000 in 1949 to 269,000 in 1957.

A large part of the increased tonnage on the Ohio consisted of through traffic bound from the Mississippi River to the Tennessee River.

Tennessee River

The Tennessee River carried 10 times as much agricultural traffic in 1957 as it did in 1949 (table 14). This compares with a sixfold increase on the Ohio. The bulk of the Tennessee River traffic was grain and grain preparations. There was also a considerable volume of inedible vegetable products in 1955 (18 percent of the total) and in 1957 (15 percent); this group undoubtedly was mostly soybeans. Farm supplies was the only other agricultural group moving on the Tennessee.

Ninety-seven percent of the agricultural traffic moved upstream in 1957 compared with 85 percent in 1949. The development of the livestock and broiler industries of the Southeastern States has created a heavy demand for grain and other ingredients of livestock and poultry feed. Substantial investments have been made in feed and flour mills and in facilities for the transfer of grain from barges to trucks and rail cars at such Tennessee River ports as Decatur and Guntersville, Ala., and Chattanooga and Knoxville, Tenn. The heavy increase in grain and soybean movement over the period 1949-57 was responsive to that demand.

Table 13.--Ohio River: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.
Grain and grain preparations	115,904	49	202,774	79	75	384,135	57	231	657,039	61	467	1,012,320	69	773
Miscellaneous food products	92,412	39	10,022	4	-89	176,600	26	91	153,096	14	66	126,638	9	37
Vegetable products, inedible	14,899	7	18,440	7	24	44,408	7	198	239,218	22	1,506	269,473	18	1,709
Farm supplies	11,872	5	26,859	10	126	66,409	10	459	30,366	3	156	65,638	4	453
Total	235,087	100	258,095	100	10	671,552	100	186	1,079,719	100	359	1,474,069	100	527

1/ Sum of upbound and downbound traffic regardless of origin or destination.

Table 14.--Tennessee River: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.
Grain and grain preparations	105,099	97	157,820	93	50	353,036	91	236	595,926	75	467	905,903	80	762
Vegetable products inedible	--	--	826	2/	--	3,687	1	--	148,430	18	--	175,816	15	--
Farm supplies	3,688	3	11,071	7	200	32,534	8	782	54,243	7	3/	52,469	5	3/
Total	108,787	100	169,717	100	56	389,257	100	258	798,599	100	634	1,134,188	100	943

1/ Sum of upbound and downbound traffic regardless of origin or destination.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.

Missouri River

Domestic agricultural traffic on the Missouri River totaled 197,000 tons in 1955 and 134,000 tons in 1957 (table 15). Although these figures represent increases over 1949 of 324 percent in 1955 and 188 percent in 1957, they are still small when compared with similar traffic moving on the Illinois, Ohio, and Tennessee Rivers for these same periods.

Subsequent to navigation improvements on the Missouri River by the Corps of Engineers, the grain movement has already expanded from 112,000 gross tons in 1957 to 284,000 tons in 1958, a 153-percent increase. With stabilization of the water flow, resulting from the completion of upstream dams in the Dakotas, the prospect is for much heavier grain movement on the Missouri River in the 1960's.

In 1949 and 1951, practically all of the agricultural traffic on the Missouri consisted of grain. From 1953, inedible vegetable products also provided a substantial part of the traffic, most of it being inedible molasses.

During 1949-57, almost all of the grain traffic moved downstream, while most of the inedible molasses moved upstream.

Columbia River 11/

Movement of agricultural products on the Columbia River totaled over 3.1 million tons in 1957 compared with 206,000 tons in 1949, a fifteenfold increase (table 16). Most of this increase was due to the great expansion in grain traffic, which rose from 122,000 tons in 1949 to 2.9 million tons in 1957, an almost twenty-fourfold increase. Wheat alone contributed 2.4 million tons of this 1957 total. As a result of this tremendous increase, the relationship of grain tonnage to total agricultural tonnage shifted from 59 percent in 1949 to 92 percent in 1957.

Volume Carried in Coastwise Traffic

The major ports on the Atlantic, Gulf, and Pacific coasts handled a gross total of 6.7 million tons of agricultural products in 1957 (table 17). 12/ Although this was 20 percent more than was handled in 1949, it was the lowest volume since that earlier year, having been 46,000 tons higher in 1951, 185,000 tons more in 1953, and 496,000 tons greater in 1955.

As expected, the Port of New York handled the largest tonnage of agricultura commodities. Its total volume equaled 1.3 million tons in 1957, a decrease of

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11/ Columbia River data are available only in combined upbound and downbound movement.

12/ "Gross tons" refers to receipts plus shipments handled at a port. In totaling the activity at all ports it results in a double count of the actual volume of freight carried, since a shipment at one port becomes a receipt at another.

Table 15.--Missouri River: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	---	---	569	1	---	---	---	---	---	---	---	---	---	---
Grain and grain preparations	46,404	100	45,535	97	-2	30,239	55	-35	105,130	54	127	112,111	84	142
Miscellaneous food products	---	---	---	---	---	504	1	---	1,739	1	---	1,063	1	---
Vegetable products, inedible	---	---	1,005	2	---	23,885	44	---	88,962	45	---	20,506	15	---
Farm supplies	37	2/	---	---	---	212	2/	3/	939	2/	3/	---	---	---
Total	46,441	100	47,109	100	1	54,840	100	18	196,770	100	324	133,680	100	188

1/ Sum of upbound and downbound traffic regardless of origin or destination.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.

Table 16.--Columbia River: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.	Tons	Pct.	Pct.
Animal and animal products	2,344	1	31,258	2	2/	35,439	3	2/	26,448	2	2/	23,925	1	2/
Grain and grain preparations	121,714	59	1,527,180	87	1,155	1,018,825	79	737	1,282,203	83	953	2,873,240	92	2,261
Fruits and vegetable preparations, fresh or frozen	3,969	2	29,769	2	650	27,862	2	602	30,704	2	674	38,325	1	866
Fruits, vegetables and preparations n.e.c.*	55,425	27	106,314	6	92	88,878	7	60	72,604	5	31	61,977	2	12
Miscellaneous food products	7,188	3	14,632	1	104	45,938	4	539	66,566	4	826	77,057	2	972
Vegetable products, inedible	9,372	5	23,519	1	151	46,371	4	395	62,416	4	566	52,870	2	464
Textile fibers	61	3/	--	--	--	1,700	3/	2/	1,671	3/	2/	1,410	3/	2/
Farm supplies	5,861	3	13,746	1	135	16,439	1	180	6,489	3/	11	7,444	3/	27
Total	205,934	100	1,746,418	100	748	1,281,452	100	522	1,549,101	100	652	3,136,248	100	1,423

1/ Sum of upbound and downbound traffic regardless of origin or destination.
2/ Because of low base figure, percentage change is not significant.
3/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

Table 17.--Coastwise commerce: Summary of agricultural traffic at major Atlantic, Gulf, and Pacific ports, selected years, 1949-57 1/

Port	1949	1951		1953		1955		1957	
	Volume	Volume	Change from 1949 2/	Volume	Change from 1949 2/	Volume	Change from 1949 2/	Volume	Change from 1949 2/
	1,000 tons	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Atlantic Coast:									
New York	1,434	1,418	-1	1,468	2	1,470	3	1,327	-7
Baltimore	1,043	1,219	17	1,027	-2	957	-8	880	-16
Philadelphia	562	772	37	855	52	746	33	618	10
Norfolk	276	305	10	298	8	329	19	275	3/
Boston	261	261	3/	332	27	303	16	210	-19
Jacksonville	37	53	41	63	69	75	101	47	25
Savannah	44	46	5	59	34	76	73	42	-4
Charleston	18	23	27	31	68	36	97	13	-29
Total	3,675	4,097	11	4,133	12	3,992	9	3,412	-7
Gulf Coast:									
New Orleans	409	573	40	588	44	731	79	783	91
Houston	212	474	123	395	86	736	247	663	213
Galveston	152	108	-29	120	-21	111	-27	226	49
Mobile	24	42	79	87	267	56	138	70	194
Total	797	1,197	50	1,190	49	1,634	105	1,742	118
Pacific Coast:									
Oakland	308	450	46	564	83	649	111	639	108
Los Angeles	224	319	42	291	30	305	36	292	30
Seattle	160	177	10	223	39	242	51	257	60
San Francisco	311	354	14	286	-8	184	-41	193	-38
Portland	93	134	45	181	95	171	84	146	58
Total	1,096	1,435	31	1,545	41	1,551	42	1,527	39
Grand total	5,568	6,729	21	6,868	23	7,177	29	6,681	20

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Percentages computed from unrounded data.
3/ Less than 0.5 percent.

7 percent from 1949. This was the same percentage decline as that of the combined Atlantic coast ports for this period. The Port of New York handled 39 percent of the total tonnage of agricultural commodities that moved through the eight major Atlantic coast ports in 1957. The total for the eight ports (3.4 million tons) was slightly larger than the combined tonnage of agricultural commodities handled by the Gulf and Pacific coast ports for the same year. However, the coastwise tonnage handled by the Gulf and Pacific coast ports has been growing rapidly since 1949. The Gulf ports had an increase of nearly 1 million tons in 1957 over 1949, while the tonnage handled by the Pacific coast ports during this period rose almost 500,000 tons. The increases at Houston, Texas, and Oakland, Calif., have been particularly spectacular. Tonnage at Houston tripled, from 212,000 tons in 1949 to 663,000 tons in 1957; at Oakland the tonnage more than doubled, increasing from 308,000 tons in 1949 to 639,000 tons in 1957.

New York, New York

Among the years covered between 1949 and 1957, the total coastwise traffic in agricultural commodities through the port of New York varied relatively little (table 18). Changes in the volume of particular commodity groups were sometimes larger, however. For example, traffic in the animals and animal products group nearly doubled from 1949 to 1955. The increase in this group was mainly caused by a rise in receipts of hides and skins and other inedible animal products. Grains and grain products rose more than 60 percent. The increases in these categories were more than offset though by the decrease in movements of farm supplies.

Receipts have consistently represented 82 to 85 percent of the total coastwise trade in agricultural commodities through New York's port facilities.

Baltimore, Maryland

Gross tonnage of domestic agricultural traffic for the Port of Baltimore was 880,000 tons in 1957 (table 19). This was 34 percent under that of New York, the leading coastal port, and 12 percent higher than the foremost Gulf port, New Orleans.

Changes in the total volume of coastwise traffic in agricultural commodities during 1949-57, ranged from a 17-percent increase in 1951 over 1949 to a 16-percent decrease in 1957 from the same base year. The most important commodity group moving through the port has consistently been farm supplies, ranging from 62 to 71 percent of the total agricultural tonnage moved. The miscellaneous food products group made up 19 percent of the total agricultural traffic in 1949, but only 9 percent in 1957. This drop is largely explained by the decline in sugar receipts; sugar accounts for most of the tonnage of miscellaneous food products. Fruits, vegetables, and preparations have quite steadily accounted for about 10 percent of all coastwise movements. The traffic at Baltimore, like that at a number of other ports on the eastern seaboard, is predominantly receipts. Over the period studied, receipts represented from 82 to 91 percent of the tonnage handled.

Table 18.--New York City, New York: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	35,720	2	46,760	3	31	67,924	5	90	70,364	5	97	66,409	5	86
Grain and grain preparations	80,362	6	92,487	7	15	103,869	7	29	130,602	9	63	129,404	10	61
Fruit, vegetables and preparations, fresh or frozen	57,374	4	54,322	4	-5	51,470	4	-10	65,030	4	13	41,227	3	-28
Fruits, vegetables and preparations n.e.c.*	454,899	32	497,827	35	9	471,721	32	4	478,101	33	5	393,134	30	-14
Miscellaneous food products	429,418	30	432,665	30	1	464,498	31	8	475,689	32	11	481,697	36	12
Vegetable products, inedible	18,328	1	34,882	2	90	39,356	3	115	64,620	4	253	23,040	2	26
Textile fibers	15,975	1	8,650	1	-46	12,259	1	-23	3,358	2/	-79	553	2/	-97
Farm supplies	341,870	24	249,968	18	-27	256,544	17	-25	182,310	13	-47	191,196	14	-44
Total	1,433,946	100	1,417,561	100	-1	1,467,641	100	2	1,470,074	100	3	1,326,660	100	-7

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified

Table 19.--Baltimore, Maryland: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	7,299	1	6,019	2/	-18	10,139	1	39	20,071	2	175	21,430	3	194
Grain and grain preparations	28,413	3	26,678	2	-6	38,568	4	36	31,921	3	12	34,637	4	22
Fruits, vegetables and preparations, fresh or frozen	206	2/	8,030	1	3/	7,717	1	3/	1,298	2/	3/	2,170	2/	3/
Fruits, vegetables and preparations n.e.c.*	81,286	8	116,775	10	44	91,725	9	13	92,114	10	13	87,572	10	8
Miscellaneous food products	202,036	19	167,039	14	-17	210,494	20	4	157,199	16	-22	80,943	9	-60
Vegetable products, inedible	1,364	2/	25,569	2	3/	32,456	3	3/	16,968	2	3/	45,195	5	3/
Textile fibers	19	2/	136	2/	3/	128	2/	3/	14	2/	-26	276	2/	3/
Farm supplies	721,973	69	868,258	71	20	635,339	62	-12	637,913	67	-12	607,897	69	-16
Total	1,042,596	100	1,218,504	100	17	1,026,566	100	-2	957,498	100	-8	880,120	100	-16

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Philadelphia, Pennsylvania

In terms of agricultural tonnage handled Philadelphia ranked third among Atlantic ports in 1957 (table 17). Coastwise shipping of agricultural commodities through this port varied from over 562,000 gross tons in 1949 to some 855,000 tons in 1953 (a 52-percent rise) and back to 618,000 tons in 1957 (table 20). Sugar, in the miscellaneous food products group, was the largest single item handled. This miscellaneous group, and fruits, vegetables, and preparations n.e.c. (not elsewhere classified) 13/, accounted for the bulk of the activity. There were heavy shipments of grains in 1951, but that spurt occurred in only one year.

Philadelphia is also principally a receiver rather than a shipper of coastwise traffic, with receipts ranging from 86 to 95 percent of the total movements between 1949 and 1955.

Norfolk, Virginia

Among Atlantic ports, Norfolk held fourth place in the volume of agricultural traffic for 1957 with 275,000 gross tons (table 17). This was 65,000 tons more than that handled at Boston, the fifth port in rank.

Coastwise traffic in agricultural commodities at Norfolk was fairly stable throughout the period 1949 to 1953, but in 1955 rose to 19 percent more than the 1949 base figure, and then dropped to slightly below the 1949 level in 1957 (table 21). Farm supplies, mostly fertilizer, moving into the port accounted for at least three-quarters of the total tonnage throughout the years covered. Canned fruits and preparations raised the category for fruits, vegetables, and preparations, n.e.c., from 5 percent of the total in 1949 to 19 percent in 1957.

Norfolk is chiefly a receiving port. Over 95 percent of its total coastwise tonnage of agricultural commodities was receipts.

Boston, Massachusetts

The Port of Boston handled 210,000 gross tons of agricultural traffic in 1957 and ranked fifth among Atlantic ports (table 17). Its coastwise agricultural tonnage was only 16 percent of New York's total for the same year.

Coastwise activity reached a peak in 1953, when it was 27 percent above 1949, and by 1957 it had dropped back to 19 percent below the 1949 level (table 22). Most of the commodity groups showed decreases; fruits, vegetables, and preparations, n.e.c., which accounted for about half the tonnage moved in 1957, dropped approximately 43,000 tons between 1953 and 1957. Farm supplies, chiefly fertilizer materials, have fluctuated from year to year but have always remained below the 1949 base.

13/ Fruits, vegetables, and preparations n.e.c. (not elsewhere classified) consist of canned, dried, evaporated or otherwise preserved fruits and vegetables, including soybean flour; edible vegetable oils and fats; and canned and frozen fruit juices.

Table 20.--Philadelphia, Pennsylvania: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	2,453	2/	2,624	2/	7	1,717	2/	-30	2,883	2/	18	1,170	2/	-52
Grain and grain preparations	6,966	1	166,144	22	2,285	19,398	2	178	9,568	1	37	7,065	1	1
Fruits, vegetables and preparations, fresh or frozen	475	2/	6,747	1	3/	4,138	1	3/	2,280	2/	3/	1,739	2/	3/
Fruits, vegetables and preparations n.e.c.*	147,579	26	163,089	21	11	145,134	17	-2	151,303	20	3	103,199	17	-30
Miscellaneous food products	297,888	53	351,884	46	18	563,758	66	89	488,636	67	64	376,088	61	26
Vegetable products, inedible	49,623	9	32,003	4	-36	43,904	5	-12	31,251	4	-37	78,053	13	57
Textile fibers	3,128	1	834	2/	-63	1,824	2/	-42	1,446	2/	-54	1,377	2/	-56
Farm supplies	54,362	10	48,927	6	-10	75,212	9	38	58,574	8	8	48,992	8	-10
Total	562,474	100	772,252	100	37	855,085	100	52	745,941	100	33	617,683	100	10

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Table 21.--Norfolk, Virginia: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	---	---	436	2/	---	---	---	---	7	2/	---	77	2/	---
Grain and grain preparations	690	2/	6,002	2	770	139	2/	-80	113	2/	-84	62	2/	-91
Fruits, vegetables and preparations, fresh or frozen	4,118	1	2,176	1	-47	891	2/	-78	110	2/	-97	474	2/	-88
Fruits, vegetables and preparations n.e.c.*	12,698	5	31,940	10	152	41,557	14	227	71,847	22	466	51,760	19	308
Miscellaneous food products	4,548	2	5,127	2	13	5,815	2	28	4,899	1	8	5,734	2	26
Vegetable products, inedible	293	2/	1,919	1	3/	7,616	3	3/	11,497	4	3/	3,117	1	3/
Textile fibers	---	---	---	---	---	47	2/	---	5	2/	---	2	2/	---
Farm supplies	253,495	92	257,245	84	1	242,303	81	-4	240,222	73	-5	213,791	78	-16
Total	275,842	100	304,845	100	10	298,368	100	8	328,700	100	19	275,017	100	0

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Table 22.--Boston, Massachusetts: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	3,149	1	2,799	1	-11	5,235	2	66	4,338	1	38	1,150	1	-63
Grain and grain preparations	2,617	1	6,162	2	135	1,819	1	-30	859	2/	-67	7,155	3	173
Fruits, vegetables and preparations, fresh or frozen	515	2/	1,720	1	234	263	2/	-51	1,127	2/	119	84	2/	-84
Fruits, vegetables and preparations n.e.c.*	94,689	37	133,083	50	41	143,516	43	52	127,034	42	34	100,877	48	7
Miscellaneous food products	68,394	26	51,713	20	-24	92,974	28	36	117,456	39	72	29,952	14	-56
Vegetable products, inedible	16,549	6	14,681	6	-11	15,650	5	-5	2,188	1	-87	7,789	4	-53
Textile fibers	5,507	2	2,416	1	-56	7,652	2	39	2,127	1	-61	1,954	1	-65
Farm supplies	69,109	27	48,505	19	-30	64,558	19	-7	47,999	16	-31	60,946	29	-12
Total	260,529	100	261,079	100	2/	331,667	100	27	303,128	100	16	209,907	100	-19

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

Throughout this period, Boston has been predominantly a receiving port for coastwise shipments of agricultural commodities, with receipts averaging 95 percent of the total activity.

Jacksonville, Florida

Domestic agricultural traffic at Jacksonville amounted to only 47,000 tons in 1957, 33 percent lower than like traffic at Mobile, the lowest volume port on the Gulf and 68 percent lower than Portland, the lowest Pacific port (table 17).

At Jacksonville, postwar coastwise traffic reached its peak in 1955, having doubled since 1949, and dropped off sharply in 1957 to only 25 percent above 1949 figures (table 23). Farm supplies and fruits, vegetables, and preparations, n.e.c., are the most important commodities passing through this port, with an occasional flurry of activity in one or another of the other commodity groups. There are wide variations in the relationship of receipts to shipments from year to year. In 1949, the ratio was 36 for receipts to 64 for shipments; in 1953, the ratio was 18 to 82; and in 1957, it was 62 to 38, a reversal of the earlier trend.

Savannah, Georgia

Gross tonnage of agricultural traffic through Savannah was 42,000 tons in 1957, just 11 percent less than that at Jacksonville (table 17).

From 1949 to 1955, this traffic rose about 73 percent, but by 1957 it had dropped back to about the 1949 level (table 24). In 1949, miscellaneous food products, mostly receipts of sugar, represented 95 percent of the port activity in agricultural movements. But by 1957 this traffic had dropped off 89 percent and had been largely replaced in importance by receipts of canned fruits and of farm supplies. Savannah is predominantly a receiving point for coastwise trade, with receipts measuring at least 76 percent of the traffic in any one year during the period covered, and most commonly being 90 percent or more.

Charleston, South Carolina

Charleston stood eighth and last in the array of major Atlantic ports, having handled only 13,000 gross tons of domestic agricultural products in 1957 (table 17). This was 69 percent below Savannah, the port with the next higher volume in the Atlantic group. Between 1949 and 1955, agricultural tonnage nearly doubled, but in 1957 trade fell to a point nearly one-third below the 1949 level (table 25). Fruits, vegetables, and preparations, n.e.c. (chiefly canned fruits) and farm supplies account for most of the traffic.

New Orleans, Louisiana

New Orleans led the Gulf ports in volume of agricultural cargo in domestic coastwise traffic (table 17). It handled 783,000 gross tons in 1957--22 percent

Table 23.--Jacksonville, Florida: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	1,003	3	338	1	-66	17	2/	-98	67	2/	-93	1,903	4	90
Grain and grain preparations	575	2	695	1	21	885	1	54	18	2/	-97	625	1	9
Fruits, vegetables and preparations, fresh or frozen	5,289	14	5,291	10	0	2,009	3	-62	369	1	-93	48	2/	-99
Fruits, vegetables and preparations n.e.c.*	16,262	44	3,714	7	-77	8,119	13	-50	12,290	16	-24	15,005	32	-8
Miscellaneous food products	2,322	6	296	1	-87	3,241	6	40	94	2/	-96	2,567	6	11
Vegetable products, inedible	79	2/	10,961	21	3/	203	2/	157	39,550	53	3/	132	2/	67
Farm supplies	11,713	31	31,397	59	168	48,352	77	313	22,406	30	91	26,330	57	125
Total	37,243	100	52,692	100	41	62,826	100	69	74,794	100	101	46,610	100	25

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Table 24.--Savannah, Georgia: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	---	---	---	---	---	345	1	---	627	1	---	257	1	---
Grain and grain preparations	---	---	---	---	---	239	2/	---	---	---	---	25	2/	---
Fruits, vegetables and preparations, fresh or frozen	2,067	5	1,167	3	-44	36	2/	-98	---	---	---	934	2	-55
Fruits, vegetables and preparations, n.e.c.*	206	2/	9,033	20	3/	11,898	20	3/	13,608	18	3/	14,171	34	3/
Miscellaneous food products	41,820	95	31,707	68	-24	44,373	75	6	33,923	44	-19	4,694	11	-89
Vegetable products, inedible	---	---	---	---	---	---	---	---	20,657	27	---	1,073	2	---
Textile fibers	---	---	---	---	---	45	2/	---	22	2/	---	78	2/	---
Farm supplies	---	---	4,202	9	---	2,343	4	---	7,552	10	---	21,047	50	---
Total	44,093	100	46,109	100	5	59,279	100	34	76,389	100	73	42,279	100	-4

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Table 25.--Charleston, South Carolina: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	---	---	---	---	---	55	2/	---	16	2/	---	---	---	---
Grain and grain preparations	---	---	300	1	---	285	1	---	---	---	---	15	2/	---
Fruits, vegetables and preparations fresh or frozen	---	---	---	---	---	126	2/	---	---	---	---	496	4	---
Fruits, vegetables and preparations n.e.c.*	419	2	2,831	12	3/	6,509	22	3/	9,537	27	3/	4,280	33	3/
Miscellaneous food products	864	5	---	---	---	74	2/	-91	21	2/	-98	36	2/	-96
Vegetable products, inedible	26	2/	106	1	3/	482	2	3/	74	2/	3/	62	1	3/
Textile fibers	---	---	10	2/	---	39	2/	---	72	2/	---	---	---	---
Farm supplies	16,848	93	19,853	86	18	22,946	75	36	26,046	73	55	8,056	62	-52
Total	18,157	100	23,100	100	27	30,516	100	68	35,766	100	97	12,945	100	-29

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

more than the leading Pacific port, Oakland, and 11 percent less than the second leading Atlantic port, Baltimore. The tonnage nearly doubled between 1949 and 1957 (table 26). The major factors contributing to this change were the three-fold increases in farm supplies and the group of inedible vegetable products and the one-third increase in grain and grain preparations. The increases in these groups were caused mostly by increases in receipts of phosphate fertilizers, receipts of molasses, and shipments of animal feeds.

At New Orleans, receipts were over 70 percent of total agricultural traffic (receipts plus shipments) in each of the selected years studied, except in 1949, when they accounted for only 53 percent.

Houston, Texas

Houston, with 663,000 gross tons of agricultural traffic in 1957, was just 15 percent below the leading Gulf port of New Orleans. By 1955, its traffic had more than trebled the 1949 level (table 27). Farm supplies, consisting mainly of receipts of phosphate fertilizers, made up 80 to 91 percent of total volumes of agricultural commodities at the Port of Houston for 1953, 1955, and 1957. Farm supplies amounted to 587,000 tons in 1957 compared with 137,000 tons in 1949. This represented a 328-percent increase. Domestic grain moving through the Port of Houston varied between 1 percent and 6 percent of annual agricultural tonnage, with the exception of 1951. In that year grain volume reached a high of 127,000 tons, almost 10 times the average volume for the other years, and represented 27 percent of the domestic agricultural tonnage.

Galveston, Texas

Domestic agricultural traffic handled by the third ranking Gulf port of Galveston was 226,000 gross tons in 1957--only about a third that of Houston (table 17). Galveston's coastwise traffic slumped nearly 30 percent in 1951 from the 1949 base and did not recover until 1957, when it showed a 49 percent increase over 1949 and more than 100 percent over 1955 (table 28). Changes in the amount of miscellaneous food products (chiefly sugar receipts) handled were largely responsible for both the downturn and the recovery. Also, traffic in farm supplies (mostly shipments of potash fertilizer) was only a third as much in 1951, 1953, and 1955 as it was in 1949 or in 1957.

The ratio of receipts to shipments varied considerably over the period--from 31 percent receipts to 69 percent shipments in 1951, to 64 percent receipts to 36 percent shipments in 1957.

Mobile, Alabama

The lowest ranking port in the Gulf group with respect to agricultural traffic was Mobile, with 70,000 gross tons of such coastwise shipping in 1957 (table 17). This was less than one-tenth as large as the traffic handled by New Orleans in the same year. In fact, in 1953, its busiest year during the period studied, Mobile handled less than 87,000 tons. Although the 1953 traffic

Table 26.--New Orleans, Louisiana: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	38,267	9	34,078	6	-11	38,201	6	0	52,822	7	38	39,799	5	4
Grain and grain preparations	98,865	24	100,958	18	2	115,120	20	16	121,881	17	23	132,033	17	34
Fruits, vegetables and preparations, fresh or frozen	1,814	1	8,071	1	345	6,527	1	260	3,253	2/	79	10,531	1	481
Fruits, vegetables and preparations, n.e.c.*	66,548	16	94,002	17	41	86,659	15	30	78,782	11	18	31,222	4	-53
Miscellaneous food products	30,111	7	35,108	6	17	74,823	13	148	96,254	13	220	46,774	6	55
Vegetable products, inedible	35,304	9	86,568	15	145	71,988	12	104	191,515	26	442	112,259	15	218
Textile fibers	587	2/	1,773	2/	202	624	2/	6	1,321	2/	125	1,614	2/	175
Farm supplies	137,280	34	212,196	37	55	194,245	33	41	185,029	26	35	408,516	52	198
Total	408,776	100	572,754	100	40	588,187	100	44	730,857	100	79	782,748	100	91

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

Table 27.--Houston, Texas: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	1,941	1	2,052	2/	6	1,965	1	1	2,722	2/	40	2,907	2/	50
Grain and grain preparations	12,811	6	127,375	27	894	6,742	2	-47	9,756	1	-24	22,014	3	72
Fruits, vegetables and preparations, fresh or frozen	657	2/	2,321	2/	253	275	2/	-58	286	2/	-56	2,810	2/	328
Fruits, vegetables and preparations n.e.c.*	37,674	18	17,454	4	-54	27,826	7	-26	25,357	4	-33	23,761	4	-37
Miscellaneous food products	21,069	10	4,580	1	-78	11,755	3	-44	1,404	2/	-93	6,364	1	-70
Vegetable products, inedible	239	2/	147	2/	-38	27,401	7	3/	25,863	4	3/	18,270	3	3/
Textile fibers	693	2/	114	2/	-84	1,298	2/	87	176	2/	-75	192	2/	-72
Farm supplies	136,981	65	319,694	68	133	317,254	80	132	670,173	91	389	586,596	89	328
Total	212,065	100	473,737	100	123	394,516	100	86	735,737	100	247	662,914	100	213

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Table 28.--Galveston Texas: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	11,391	8	10,038	9	-12	11,398	9	0	7,890	7	-31	6,154	3	-46
Grain and grain preparations	44,420	29	51,928	48	17	49,984	42	13	39,834	36	-10	41,900	19	-6
Fruits, vegetables and preparations, fresh or frozen	991	1	717	1	-28	1,415	1	43	1,073	1	8	640	2/	-35
Fruits, vegetables and preparations n.e.c.*	1,381	1	1,352	1	-2	2,041	2	48	1,592	1	15	3,436	1	149
Miscellaneous food products	65,454	43	33,421	31	-49	45,730	38	-30	51,053	46	-22	144,472	64	121
Vegetable products, inedible	273	2/	32	2/	-88	---	---	---	---	---	---	607	2/	122
Textile fibers	---	---	---	---	---	423	2/	---	530	1	---	---	---	---
Farm supplies	27,809	18	10,496	10	-62	9,151	8	-67	9,131	8	-67	29,032	13	4
Total	151,719	100	107,984	100	-29	120,142	100	-21	111,103	100	-27	226,241	100	49

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

was more than 3½ times the 1949 traffic, it dropped off somewhat after that. Yet in 1957 it was still almost three times what it had been in 1949 (table 29). The animals and animal products group rose markedly, due mostly to increased shipments of condensed and evaporated milk; fruits, vegetables, and preparations, n.e.c., rose almost 50 percent; and farm supplies increased from 336 tons in 1949 to almost 17,000 tons in 1957.

From 1949 through 1955, Mobile's traffic in domestic agricultural products was mostly incoming, maintaining approximately a 2 to 1 ratio or better over outgoing traffic. In 1957, this pattern was reversed, so that shipments accounted for 62 percent of the total.

Oakland, California

Oakland was the leading Pacific port in coastwise movement of agricultural products (table 17). In 1957, this movement amounted to 639,000 gross tons, less than half of the agricultural traffic handled by New York, the leading Atlantic port. Coastwise trade in agricultural commodities through this port more than doubled in the years between 1949 and 1957 (table 30). The doubling of traffic in fruits, vegetables, and preparations, n.e.c., which has consistently represented about 80 percent or more of all the activity in agricultural commodities, accounts for most of this increase. Although individually they did not represent a large proportion of the cargo moving through the port, dairy products, inedible molasses, and fertilizers increased enormously over the period. Dairy products raised the animals and animal products group to more than 7 times the amount handled in 1949, and fertilizers raised the farm supplies group to over 46 times the 1949 figure.

Essentially, Oakland serves as a shipping port in coastwise traffic of agricultural commodities. Receipts there ranged from as low as 20 percent in 1953 to 26 percent in 1955.

Los Angeles, California

Coastwise trade in agricultural products at Los Angeles amounted to 292,000 gross tons in 1957, 54 percent less than the agricultural traffic through Oakland, the leading Pacific port (table 17). Movements of agricultural commodities through this port in 1957 were 30 percent greater than in 1949, but somewhat under the amounts handled in 1951 and 1955 (table 31). Fruits and vegetables and their products, both edible and inedible, and miscellaneous food products were the chief agricultural commodities moving through the port of Los Angeles (86 percent of all agricultural cargo in 1957); the inedible vegetable products accounted for about half of that total. In 1949, these same commodities represented about the same total proportion of the agricultural movements through this port, but inedible products accounted for less than 20 percent of that total. Although they represented only 7 percent of the agricultural commodities passing through Los Angeles in 1957, frozen fruits and vegetables had more than doubled in volume since 1949. Grains and grain preparations, too, were about 2 3/4 times the 1949 figure in 1957.

Table 29.--Mobile, Alabama: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	429	2	6,056	14	2/	7,636	9	2/	9,253	16	2/	10,286	15	2/
Grain and grain preparations	4,362	18	7,536	18	73	7,248	8	66	7,320	13	68	13,968	20	220
Fruits, vegetables and preparations, fresh or frozen	465	2	504	1	8	797	1	71	19	3/	-96	2,695	4	2/
Fruits, vegetables and preparations, n.e.c.*	14,220	60	23,151	55	63	22,259	26	57	27,980	50	97	21,203	30	49
Miscellaneous food products	2,115	9	1,356	3	-36	3,055	3	44	1,549	3	-27	2,607	4	23
Vegetable products, inedible	1,709	8	1,828	4	7	31,877	37	2/	1,458	3	-15	1,938	3	13
Textile fibers	---	---	---	---	---	4	3/	---	46	3/	---	6	3/	---
Farm supplies	336	1	1,893	5	2/	13,984	16	2/	8,643	15	2/	16,868	24	2/
Total	23,636	100	42,324	100	79	86,860	100	267	56,268	100	138	69,571	100	194

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Because of low base figure, percentage change is not significant.
3/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

Table 30.--Oakland, California: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	890	2/	2,394	1	169	3,620	1	307	6,856	1	670	6,718	1	655
Grain and grain preparations	24,893	8	53,030	12	113	47,067	8	89	39,355	6	58	37,922	6	52
Fruits, vegetables and preparations, fresh or frozen	10,163	3	1,624	2/	-84	10,312	2	1	4,456	1	-56	6,372	1	-37
Fruits, vegetables and preparations n.e.c.*	267,786	87	376,486	84	41	462,858	82	73	515,195	79	92	529,133	83	98
Miscellaneous food products	1,489	1	2,253	2/	51	34,587	6	3/	25,164	4	3/	28,016	4	3/
Vegetable products, inedible	420	2/	10,090	2	3/	2,873	1	584	16,822	3	3/	5,503	1	3/
Textile fibers	1,869	1	1,122	2/	-40	1,378	2/	-26	1,503	2/	-20	1,534	2/	-18
Farm supplies	519	2/	3,108	1	499	1,720	2/	231	39,603	6	3/	24,063	4	3/
Total	308,029	100	450,107	100	46	564,415	100	83	648,954	100	111	639,261	100	108

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

Table 31.--Los Angeles, California: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	5,091	2	7,186	2	41	5,607	2	10	6,302	2	24	6,710	3	32
Grain and grain preparations	8,607	4	16,174	5	88	16,898	6	96	23,453	8	172	23,788	8	176
Fruits, vegetables and preparations, fresh or frozen	8,398	4	20,718	6	147	27,176	9	224	21,186	7	152	19,683	7	134
Fruits, vegetables and preparations n.e.c.*	70,004	31	107,428	34	53	86,652	30	24	62,477	20	-11	55,360	19	-21
Miscellaneous food products	81,863	37	15,011	5	-82	43,657	15	-47	60,248	20	-26	47,569	16	-42
Vegetable products, inedible	38,826	17	126,419	40	226	78,644	27	102	115,842	38	198	129,311	44	233
Textile fibers	1,805	1	443	2/	-76	1,240	2/	-31	714	2/	-60	366	2/	-80
Farm supplies	9,526	4	25,174	8	164	30,899	11	224	15,276	5	60	9,455	3	-1
Total	224,120	100	318,553	100	42	290,773	100	30	305,498	100	36	292,242	100	30

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

In the years 1949-57, receipts consistently represented more than half the volume of agricultural products handled, ranging from a low of 56 percent in 1953 to a high of 70 percent in 1949. In 1957, receipts totaled 68 percent of the total.

Seattle, Washington

Seattle was the third-ranking Pacific port with 257,000 gross tons of agricultural traffic in 1957, 60 percent less than Oakland (table 17). This port has experienced a sharp rise in the coastwise movement of agricultural products--60 percent in the 9-year span under consideration (table 32).

The jump in shipments of miscellaneous food products in 1953 is, however, in some measure artificial. It results mainly from the introduction of a category, groceries and food, n.e.c., the contents of which had been distributed among other categories in earlier years. Molasses shipments were responsible for the great increase in shipments of inedible vegetable products. Shipments of fresh and frozen fruits and vegetables more than doubled in this period. Vegetables and vegetable preparations dropped significantly, pulling down the group of fruits, vegetables, and preparations, n.e.c., in 1957 to less than 30 percent of its 1949 level. Aside from movements of farm supplies, which have represented a negligible portion of the traffic in all the years, fruits, vegetables, and preparations, n.e.c., has been the only category showing a decrease in activity at this port.

The ratio of receipts to shipments in coastwise agricultural traffic through Seattle varied widely between 1949 and 1957, with shipments fluctuating from 57 percent of the total in 1951 to 72 percent in 1957. These changes do not reflect a turnabout in any one major group but rather variations in most of the agricultural commodity groups.

San Francisco, California

San Francisco handled 193,000 gross tons of coastwise agricultural cargo in 1957 (table 33). This traffic has been dropping off since 1951. Between 1951 and 1957, grain shipments fell off about three-fourths and shipments of fruits, vegetables, and preparations, n.e.c., were cut nearly two-thirds. Wool, although never shipped in large quantities from San Francisco, was reduced to almost nothing. The only significant increase in movement through this port was that of inedible molasses, which accounted for the increased traffic shown in the inedible vegetable products category. In 1949, shipments represented 80 percent of the total activity in agricultural commodities; in 1957, the traffic was about equally divided between receipts and shipments.

Portland, Oregon

Portland ranked last among the major Pacific ports in coastwise traffic of agricultural products (table 17). Its 146,000 gross tons of agricultural products in 1957 were equal to only 23 percent of the comparable traffic

Table 32.--Seattle, Washington: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	28,636	18	34,546	20	21	24,687	11	-14	29,028	12	1	40,470	16	41
Grain and grain preparations	24,696	15	33,867	19	37	29,126	13	18	33,565	14	36	40,739	16	65
Fruits, vegetables and preparations, fresh or frozen	10,863	7	15,613	9	44	21,532	10	98	21,261	9	96	24,906	10	129
Fruits, vegetables and preparations n.e.c.*	63,560	40	42,475	24	-33	28,986	13	-55	27,054	11	-57	18,309	7	-71
Miscellaneous food products	21,452	13	16,222	9	-24	79,183	35	269	93,961	38	338	99,976	39	366
Vegetable products, inedible	6,340	4	23,293	13	267	37,658	17	494	30,837	13	386	29,807	11	370
Textile fibers	225	2/	50	2/	-78	92	2/	-59	29	2/	-87	1	2/	2/
Farm supplies	4,706	3	11,239	6	139	1,881	1	-60	6,501	3	38	2,322	1	-51
Total	160,478	100	177,305	100	10	223,145	100	39	242,236	100	51	256,530	100	60

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

Table 33.--San Francisco, California: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	15,494	5	19,764	6	28	12,363	4	-20	15,780	9	2	17,057	9	10
Grain and grain preparations	100,640	32	130,037	37	29	116,035	41	15	45,436	25	-55	30,782	16	-69
Fruits, vegetables and preparations, fresh or frozen	15,502	5	21,307	6	37	24,877	9	60	16,935	9	9	18,789	10	21
Fruits, vegetables and preparations n.e.c.*	143,186	46	159,186	45	11	96,120	34	-33	55,975	31	-61	59,736	31	-58
Miscellaneous food products	31,078	10	16,663	5	-46	27,443	10	-12	27,665	15	-11	26,114	14	-16
Vegetable products, inedible	1,127	2/	4,642	1	312	5,593	2	396	19,894	11	3/	37,883	20	3/
Textile fibers	2,949	1	1,352	2/	-54	2,159	2/	-27	1,171	2/	-60	553	2/	-81
Farm supplies	1,510	1	1,527	2/	1	1,435	2/	-5	660	2/	-56	1,852	2/	23
Total	311,486	100	354,478	100	14	286,025	100	-8	183,516	100	-41	192,766	100	-38

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
3/ Because of low base figure, percentage change is not significant.
* N.e.c.--Not elsewhere classified.

at Oakland. The coastwise trade of agricultural commodities nearly doubled from 1949 to 1953 but dropped off to only 58 percent above the 1949 figure in 1957 (table 34). Almost all commodity groups declined in volume after 1953. But molasses bolstered the inedible vegetable products category, and the introduction of groceries and food, n.e.c., as a separate group in 1953 accounts for the continued rise in miscellaneous food products.

The 2 to 1 ratio of shipments to receipts remained fairly constant at this port during the period studied.

Volume Carried on Great Lakes

Over 8.9 million gross tons of agricultural commodities and supplies moved on the Great Lakes in 1957 (table 35). This figure is a cumulative total of the receipts and shipments on each of the five lakes. It contrasts with the net tonnage figure of almost 4.5 million tons previously cited for the Great Lakes, which referred only to shipments originating on these bodies of water.

For statistical purposes, the U. S. Corps of Engineers treats the Great Lakes as a self-contained unit in which all domestic shipments that originate on the lakes and move to another lake port are considered as terminating there, even though such shipments may move beyond the lake ports by other means of transport. As a result, the gross tonnage figures for the Great Lakes as a whole tend to average about twice the net tonnage.

Table 35 shows that the movement of agricultural commodities on all of the lakes was lower in each subsequent year studied than in 1949--the only exception being Lake Michigan in 1951, when the tonnage moved was 20 percent higher than in 1949.

Nearly all of the domestic lake traffic of agricultural commodities and supplies originated or terminated on Lakes Erie, Michigan, and Superior. They accounted for 94 percent of the total lake tonnage in 1949 and 97 percent in 1957. Lake Huron is used exclusively for through traffic, and Lake Ontario, the farthest east of the Great Lakes, contains only limited port facilities.

Considerable variation in ratio of receipts to shipments exists among the lakes. For example, almost all of the agricultural traffic on Lake Superior originates there, while on Lake Michigan the percentage of shipments ranged from 48 to 58 percent during the period 1949 through 1957. For the same period receipts represented from 96 to 100 percent of all the agricultural traffic moving on Lake Erie and Lake Ontario.

Lake Erie

The peak of activity on Lake Erie for this entire period was 1949, with 1953 the low point (table 36). By 1957, some 2,800,000 gross tons of domestic agricultural traffic were handled at its ports, still 25 percent below the 1949 level. About 95 percent of this 1957 traffic was receipts of grain, mostly wheat.

Table 34.--Portland, Oregon: Gross tonnage of agricultural coastwise traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	1,920	2	2,408	2	25	2,146	1	12	2,088	1	9	1,655	1	-14
Grain and grain preparations	14,705	16	18,276	13	24	18,400	10	25	15,085	9	3	8,474	6	-42
Fruits, vegetables and preparations, fresh or frozen	6,859	7	9,749	7	42	19,901	11	190	12,053	7	76	11,263	7	64
Fruits, vegetables and preparations n.e.c.*	45,057	49	69,644	52	55	55,820	31	24	33,572	20	-25	17,767	12	-61
Miscellaneous food products	7,124	8	13,227	10	86	44,577	25	526	61,090	36	758	71,332	49	901
Vegetable products, inedible	9,659	10	17,562	13	82	37,142	20	285	45,239	26	368	34,903	24	261
Textile fibers	1,496	2	1,137	1	-24	1,350	1	-10	1,174	1	-22	871	1	-42
Farm supplies	5,861	6	2,284	2	-61	1,252	1	-79	488	2/	-92	122	2/	-98
Total	92,681	100	134,287	100	45	180,588	100	95	170,789	100	84	146,387	100	58

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

Table 35.--Domestic commerce on lakes: Summary of agricultural traffic by lakes, selected years 1949-57 1/

Lake 2/	1949	1951		1953		1955		1957	
	Volume	Volume	Change from 1949 3/	Volume	Change from 1949 3/	Volume	Change from 1949 3/	Volume	Change from 1949 3/
	1,000 tons	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Erie	3,761	3,359	-11	2,218	-41	2,919	-22	2,819	-25
Michigan	3,213	3,851	20	4/2,489	-23	2,781	-13	3,123	-3
Ontario	642	174	-73	518	-19	487	-24	262	-59
Superior	3,842	3,698	-4	2,337	-39	3,115	-19	2,708	-30
Total	11,458	11,082	-3	7,562	-34	9,302	-19	8,912	-22

1/ Volume is the sum of receipts and shipments for each lake and is given as gross tons. Because of rounding, these figures may vary slightly from similar figures shown elsewhere.

2/ Since no agricultural tonnage originated or terminated on Lake Huron during 1949-57, this lake is not included in this table.

3/ Percentages computed from unrounded data.

4/ Does not include volume carried by rail-car ferries.

Table 36.--Lake Erie: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Grain and grain preparations	3,590,182	96	3,158,750	94	-12	2,104,589	95	-41	2,707,270	93	-25	2,664,383	95	-26
Fruits, vegetables and preparations fresh or frozen	11,670	2/	1,210	2/	-90	1,222	2/	-90	1,472	2/	-87	488	2/	-96
Miscellaneous food products	266	2/	410	2/	54	208	2/	-22	200	2/	-25	225	2/	-15
Vegetable products, inedible	158,720	4	199,019	6	25	111,951	5	-29	209,834	7	32	154,351	5	-3
Farm supplies	---	--	7	2/	--	36	2/	--	---	--	--	---	--	---
Total	3,760,838	100	3,359,396	100	-11	2,218,006	100	-41	2,918,776	100	-22	2,819,447	100	-25

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.

Lake Michigan

Although it showed considerable variation from 1949 to 1957, domestic agricultural traffic on Lake Michigan amounted in 1957 to over 3.1 million tons, approximately its 1949 level (table 37). In 1957, traffic on this lake was 35 percent of agricultural tonnage on all the lakes.

A greater variety of agricultural commodities moved over Lake Michigan than over any of the other lakes. Although grains and grain preparations and animals and animal products were the largest commodity groups moved (76 to 86 percent of the total) all eight of the commodity groups were handled at its ports.

Another aspect of the agricultural traffic on Lake Michigan is that most of it moves via rail-car ferry in contrast to lake vessels. In this type of service the rail cars are switched onto ferries equipped with tracks and are moved back onto the railroad when the vessel reaches its destination at a lake port. In 1957, about 2.3 million tons, or three-fourths of the gross agricultural traffic, moved in this manner.

In 1957, grain movements (mostly corn and wheat) grossed 2.1 million tons, 8 percent below the 1949 figure. Such movements varied from 57 to 72 percent of total agricultural traffic over the period.

Dairy products, cheese, and fresh and frozen meats and meat products, made up the bulk of the animal and animal products group moving on Lake Michigan. The 1951 tonnage for this group was 81 percent higher than in 1949, but in 1957 it was only 17 percent higher.

Lake Ontario

During 1949-57, agricultural traffic on Lake Ontario consisted almost entirely of grain receipts.

In 1957, gross agricultural volume on Lake Ontario was about 262,000 tons, a drop of 59 percent from the 642,000 tons moved in 1949 (table 38). An even sharper drop occurred in 1951, down 73 percent from 1949. Wheat, barley, and rye made up the bulk of the grain movement.

Lake Superior

Domestic agricultural traffic at Lake Superior ports amounted to 2.7 million tons in 1957, off 30 percent from 1949 (table 39). Except for a substantial rise in 1955 over 1953, there was a gradual decline in this trade over the period. Domestic grain shipments originating here and destined for ports on Lakes Erie and Ontario made up the bulk of the tonnage.

Wheat made up about three-fourths of the grain shipments on Lake Superior in 1957. For the period 1949-55, wheat shipments ranged from 61 to 91 percent of the total grain shipments. The balance of the grain traffic consisted largely of barley, rye, and corn.

Table 38.--Lake Ontario: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percent-age of total	Volume	Percent-age of total	Change from 1949	Volume	Percent-age of total	Change from 1949	Volume	Percent-age of total	Change from 1949	Volume	Percent-age of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	772	2/	1,378	1	78	1,154	2/	49	32	2/	-96	24	2/	-97
Grain and grain preparations	637,447	99	162,346	93	-75	497,792	96	-22	415,355	85	-35	255,932	98	-60
Fruits, vegetables and preparations, fresh or frozen	3,285	1	---	---	---	---	---	---	---	---	---	---	---	---
Vegetable products, inedible	---	---	10,419	6	---	18,976	4	---	71,895	15	---	6,334	2	---
Textile fibers	---	---	4	2/	---	---	---	---	---	---	---	4	2/	---
Farm supplies	38	2/	5	2/	-87	---	---	---	---	---	---	---	---	---
Total	641,542	100	174,152	100	-73	517,922	100	-19	487,282	100	-24	262,294	100	-59

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.

Table 39.--Lake Superior: Gross tonnage of agricultural traffic by commodity groups, selected years 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percent-age of total	Volume	Percent-age of total	Change from 1949	Volume	Percent-age of total	Change from 1949	Volume	Percent-age of total	Change from 1949	Volume	Percent-age of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	7	2/	4	2/	-43	4	2/	-43	---	---	---	---	---	---
Grain and grain preparations	3,683,216	96	3,488,450	94	-5	2,212,692	95	-40	2,833,281	91	-23	2,552,437	94	-31
Miscellaneous food products	50	2/	25	2/	-50	30	2/	-40	---	---	---	---	---	---
Vegetable products, inedible	158,720	4	209,438	6	32	124,732	5	-21	281,229	9	77	155,477	6	-2
Total	3,841,993	100	3,697,917	100	-4	2,337,458	100	-39	3,114,510	100	-19	2,707,914	100	-30

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Less than 0.5 percent.

Table 37.--Lake Michigan: Gross tonnage of agricultural traffic by commodity groups, selected years, 1949-57 1/

Commodity group	1949		1951			1953			1955			1957		
	Volume	Percentage of total	Volume	Percentage of total	Change from 1949	Volume 2/	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949	Volume	Percentage of total	Change from 1949
	Tons	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent	Tons	Percent	Percent
Animal and animal products	458,858	14	831,324	22	81	469,996	19	2	604,046	22	32	536,848	17	17
Grain and grain preparations	2,294,873	72	2,475,208	64	8	1,428,695	57	-38	1,572,202	57	-31	2,110,680	68	-8
Fruits, vegetables and preparations fresh and frozen	89,343	3	95,670	2	7	64,351	3	-28	57,834	2	-35	45,066	1	-50
Fruits, vegetables and preparations n.e.c*	156,348	5	154,718	4	-1	133,000	5	-85	142,858	5	-9	178,774	6	14
Miscellaneous food products	32,874	1	85,485	2	160	226,080	9	588	230,552	8	601	16,277	1	-50
Vegetable products, inedible	36,714	1	22,046	1	-40	17,725	1	-52	26,940	1	-27	107,692	3	193
Textile fibers	3,408	3/	1,190	3/	-65	2,302	3/	-32	3,822	3/	12	954	3/	-72
Farm supplies	140,732	4	184,921	5	31	147,256	6	5	143,108	5	2	126,786	4	-10
Total	3,213,150	100	3,850,562	100	20	2,489,405	100	-23	2,781,362	100	-13	3,123,077	100	-3

1/ Volume is the sum of receipts and shipments given as gross tons.
2/ Does not include volume carried on rail-car ferries. These data are not available for 1953.
3/ Less than 0.5 percent.
* N.e.c.--Not elsewhere classified.

* U.S. GOVERNMENT PRINTING OFFICE: 1961 O - 590387